

In the Claims:

1. (Currently Amended) A thermal sensor in an integrated circuit comprising:
a register to hold a response of said thermal sensor; and
an Input/Output (I/O) interface having an input node to receive an input trigger to trigger said thermal sensor to output on an output node of said interface an output signal that includes a first value that indicates said thermal sensor is sensing the temperature of said integrated circuit, a second value representative of said response held by said register, ~~an a first value indicator that indicates said thermal sensor is sensing the temperature of said integrated circuit,~~ and a third value generated by said thermal sensor that indicates said thermal sensor is functioning properly.
2. (Previously Presented) The thermal sensor of claim 1, wherein said Input/Output interface comprises a digital Input/Output interface having at least one input node capable of receiving a digital input and at least one output node capable of asserting a digital output.
3. (Previously Presented) The thermal sensor of claim 2, wherein said input node and output node comprises at least two electrical contacts capable of providing an off chip interface.

Claims 4 and 5 cancelled.

6. (Original) The thermal sensor of claim 1, wherein said integrated circuit comprises a microprocessor.
7. (Original) The thermal sensor of claim 1, wherein said integrated circuit comprises a very large scale integration (VLSI) circuit.

8. (Previously Presented) The thermal sensor of claim 1, wherein said thermal sensor appends said value that indicates said thermal sensor is functioning properly to said response of said thermal sensor.
9. (Original) The thermal sensor of claim 1, wherein said thermal sensor is a calibrated sensor.
10. (Original) The thermal sensor of claim 1, wherein said thermal sensor is an active sensor.
11. (Currently Amended) In an integrated circuit having a thermal sensor, a method for said thermal sensor to provide an indication that said thermal sensor is functioning properly, the method comprising the steps of:
 - asserting an input signal at a first Input/Output pin of said thermal sensor to initiate thermal sensing of said integrated circuit by said thermal sensor;
 - sensing by said thermal sensor a temperature of said integrated circuit; and
 - asserting an output signal on a second Input/Output pin of said thermal sensor by said thermal sensor ~~at completion of said step of sensing~~, wherein said output signal provides a first value indicating said step of sensing is being performed, a second value representative of said temperature of said integrated circuit, a third value that and provides said indication that said thermal sensor is functioning properly.
12. (Original) The method of claim 11 further comprising the step of writing said temperature of said integrated circuit to a register of said thermal sensor.

13. (Original) The method of claim 11, further comprising the step of asserting a status signal on said second Input/Output pin of said thermal sensor during said step of sensing by said thermal sensor a temperature of said integrated circuit to indicate that said sensing is occurring.

14. (Original) The method of claim 11, wherein said output signal comprises a first portion and a second portion.

15. (Original) The method of claim 14, wherein said first portion of said output signal comprises a value representative of said temperature of said integrated circuit.

16. (Original) The method of claim 14, wherein said second portion of said output signal comprises a value representative of said indication that said thermal sensor is functioning properly.

17. (Original) The method of claim 15, wherein said value representative of said temperature indicates an absolute temperature.

18. (Original) The method of claim 15, wherein said value representative of said temperature indicates a relative temperature.

19. (Withdrawn) A thermal sensor in an integrated circuit that reports a status value, a response value and a self-test value comprising:

a serial interface having at least one input contact and one output contact, wherein assertion of a control signal on said input contact triggers said thermal sensor to report said status value, said response value and said self-test value on said output contact.

20. (Withdrawn) The thermal sensor of claim 19 comprises an active thermal sensor.

21. (Withdrawn) The thermal sensor of claim 19, wherein said response value comprises an absolute temperature value.
22. (Withdrawn) The thermal sensor of claim 19, wherein said response value comprises a relative temperature value.
23. (Withdrawn) The thermal sensor of claim 19, wherein said status value indicates that said thermal sensor is obtaining said response value.
24. (Withdrawn) The thermal sensor of claim 19, wherein said self-test value indicates functionality of said serial interface.
25. (Withdrawn) In a very large scale integration (VLSI) circuit a method for reporting a temperature sensed by a thermal sensor of said VLSI circuit comprising the steps of:
- triggering said thermal sensor to sense said temperature of said VLSI circuit;
 - affixing a value to said temperature sensed by said thermal sensor to form a response; and
 - transmitting said response from said thermal sensor.
26. (Withdrawn) The method of claim 25, further comprising the step of determining from said response an operational state of said thermal sensor.
27. (Withdrawn) The method of claim 26, wherein said affixed value indicates said operational state of said thermal sensor.
28. (Withdrawn) The method of claim 26, wherein said response is transmitted to an integrated circuit external to said VLSI circuit.

29. (Withdrawn) The method of claim 25, further comprising the steps of reporting a status by said thermal sensor while said thermal sensor senses said temperature of said VLSI circuit.

In the Figures

Figures 1 and 2 are amended. The attached sheet of drawings include changes to Figures 1 and 2. These sheets replace the original sheets including Figures 1 and 2. In Figure 1, the interface is redrawn to be inside the integrated circuit 12. In Figure 2, the waveform diagram is amended to include a clock signal.